Q-321R2

SVE BULLETIN

SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

E-Mail via Website: www.FordBBAS.com (click "Contact Us")
Toll-free: (877) 840-4338

QVM BULLETIN: Q-321R2 DATE: 29MAR2021

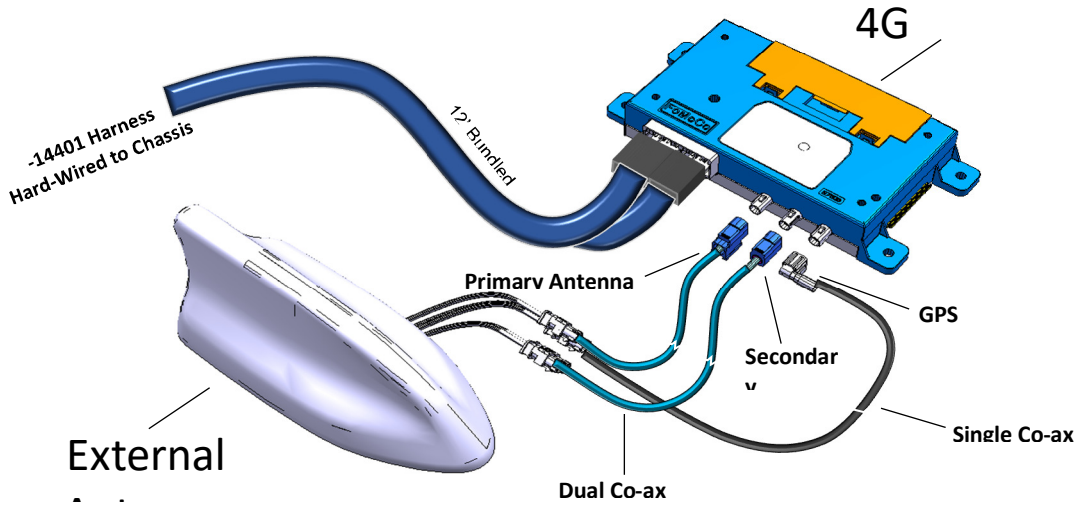
WIFI EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION

REVISION	UPDATE	REVISION DATE
Q-321R2	Provided improved antenna mounting direction	29 MAR 2021
Q-321R1	Removed F5X from Title; Added Note	08MAR2021
Q-321	INITIAL RELEASE	11 Aug. 2020

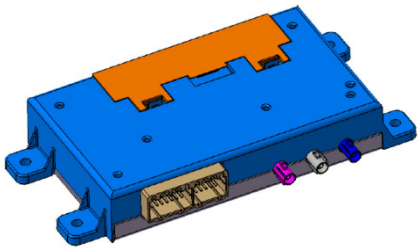
MODEL(S) AFFECTED:
2020 & 2021 Model Year F5X, E-SERIES SC/CA, F650/750 Vehicles

ISSUE / DESCRIPTION:
Recommended installation for mounting GPS antenna and modem to make sure optimum performance is achieved for the WIFI.
NOTE: The embedded modem that is equipped on the F53, F59, F-650/750 and VN127 Stripped Chassis are VIN specific. The embedded modem must stay with the particular chassis it came with since it is programmed with the chassis and is VIN specific. Upfitters must ensure they keep the embedded modem with the respective chassis through their assembly process.

Modem System consists of:
- Modem
- External Antenna
- (2) Co-ax Cables - (1) Dual Cellular (1) GPS Antenna



4G EMBEDDED MODEM SPECIFICATIONS



Package environment/location

- Standard Packaging Clearances (6mm)
- Dry/protected location

Orientation Wi-Fi end of module pointed towards occupants/users, see Figures 1 & 2.

- Module orientation with the connectors pointing downward and positioned to divert water away – meet requirement RQT-191001-009919 (EC-0073) Module Connector Orientation

Thermal

- Generates some heat into bottom plate. Should not be packaged in a small, sealed enclosure. Recommend providing space under module, 6mm would be sufficient.

EMC

- No issues with external antenna (all bundles)

Assembly/Service

- Service - Must be serviceable without removing major components (ex. carpets, seats).

Other/reference:

- Module Wt. = 400g (estimated)

The module is designed to allow the Wi-Fi antenna signal to propagate out of the top, bottom, and sides of the module.

The vehicle environment and mounting location will have a large effect of on the Wi-Fi performance. In general, being closer to the source and reducing the amount of interference around the antenna will improve the signal strength.

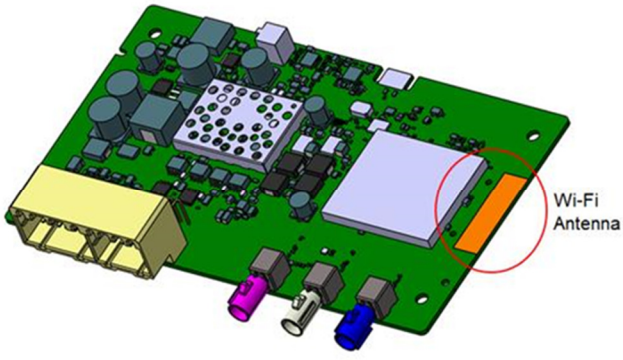


Figure 1

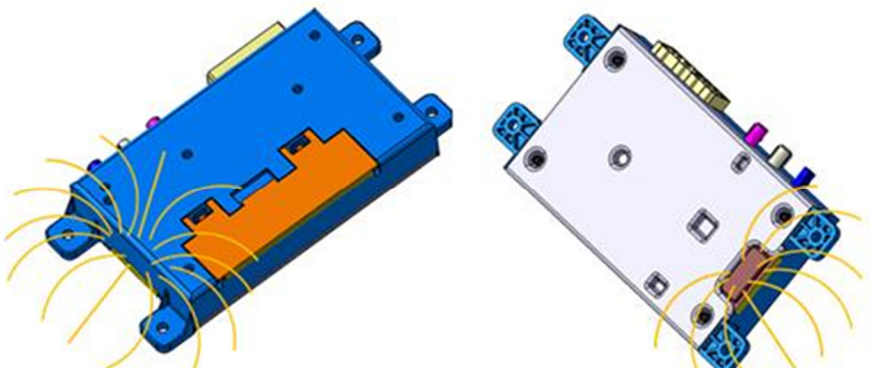
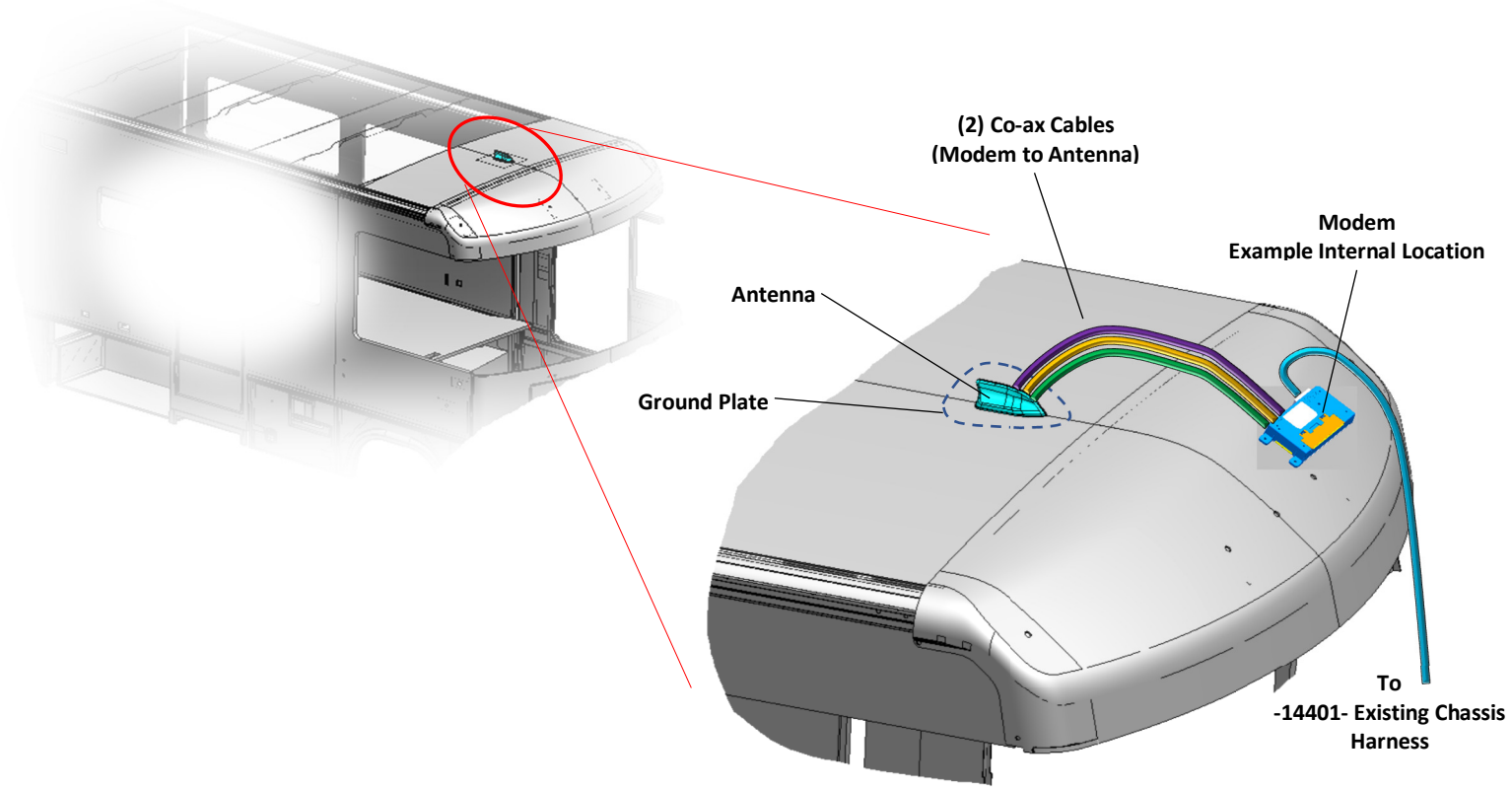
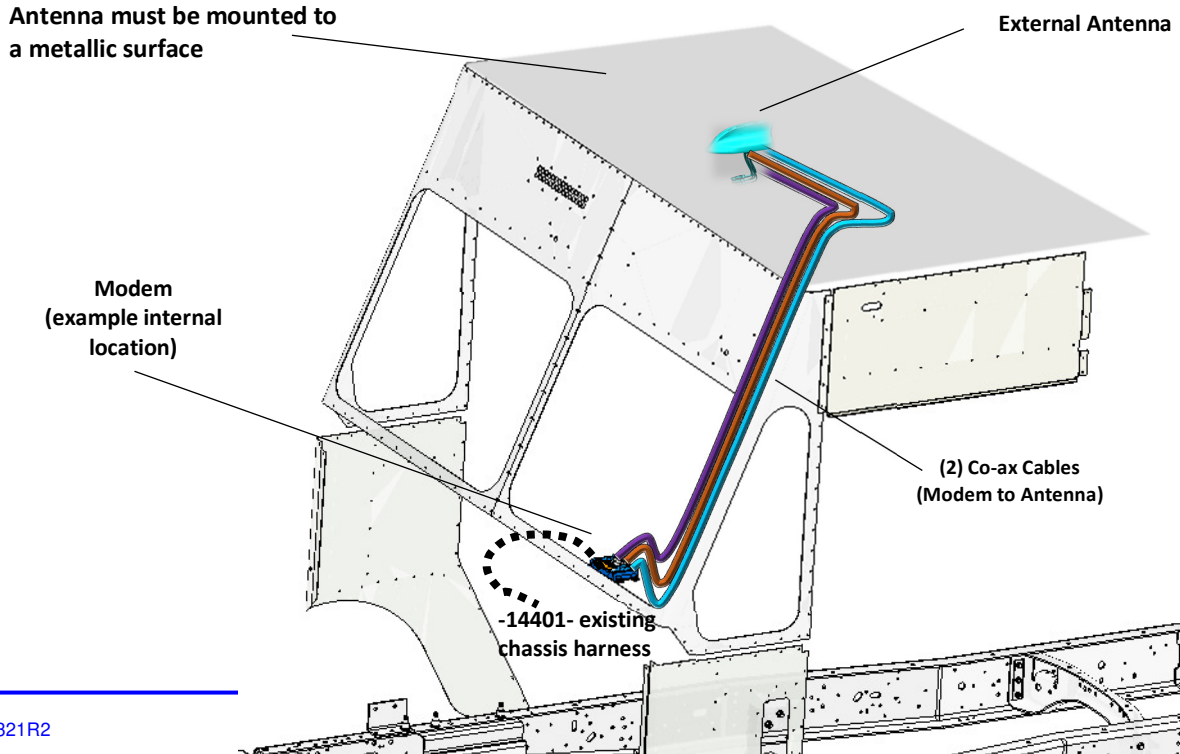


Figure 2

MOTORHOME CHASSIS MOUNTING EXAMPLE



COMMERCIAL CHASSIS MOUNTING EXAMPLE

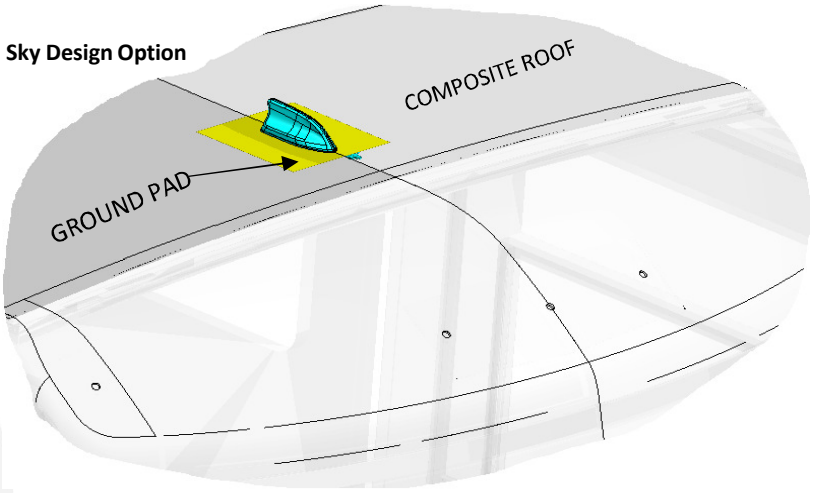


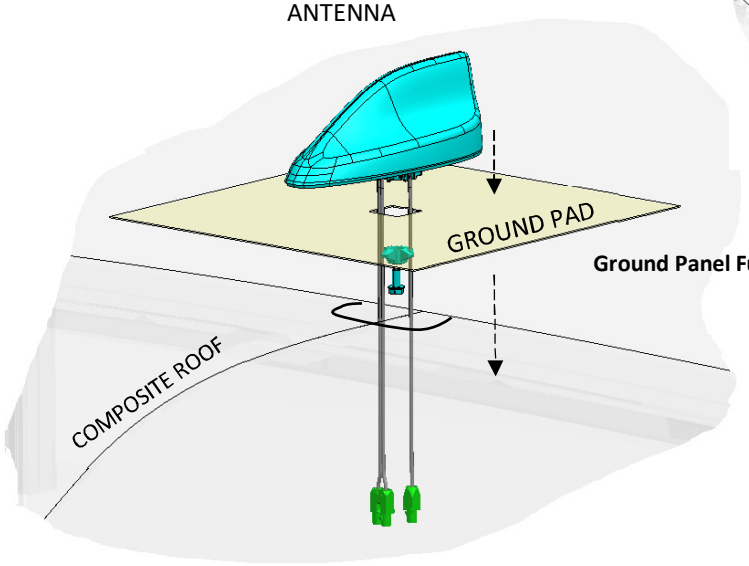
Suggested Commercial chassis mounting

Antenna mounting

For vehicles with **Non-Metallic** surface there must be an exposed RF Performance Pad (Metal Ground Plate)

Ground Pad Fully Exposed to Sky Design Option

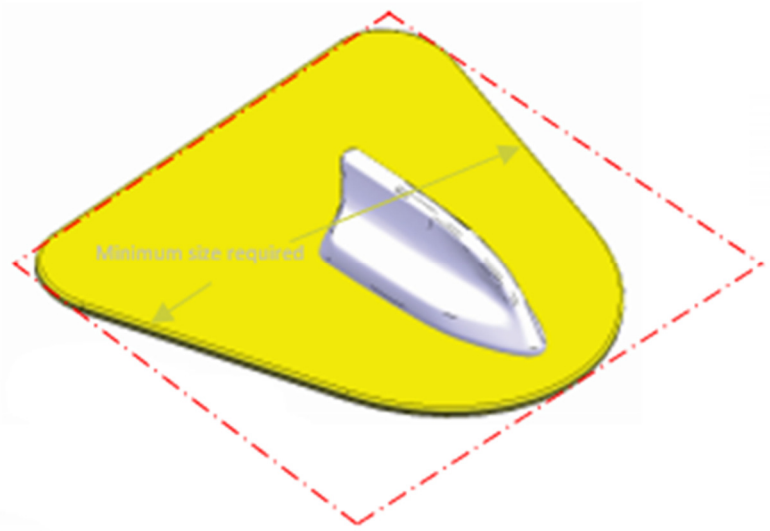




Ground Panel Fully Exposed to Sky Design Option

For vehicles with **Non-Metallic** surface there must be an RF Performance Pad (Metal Ground Plate)

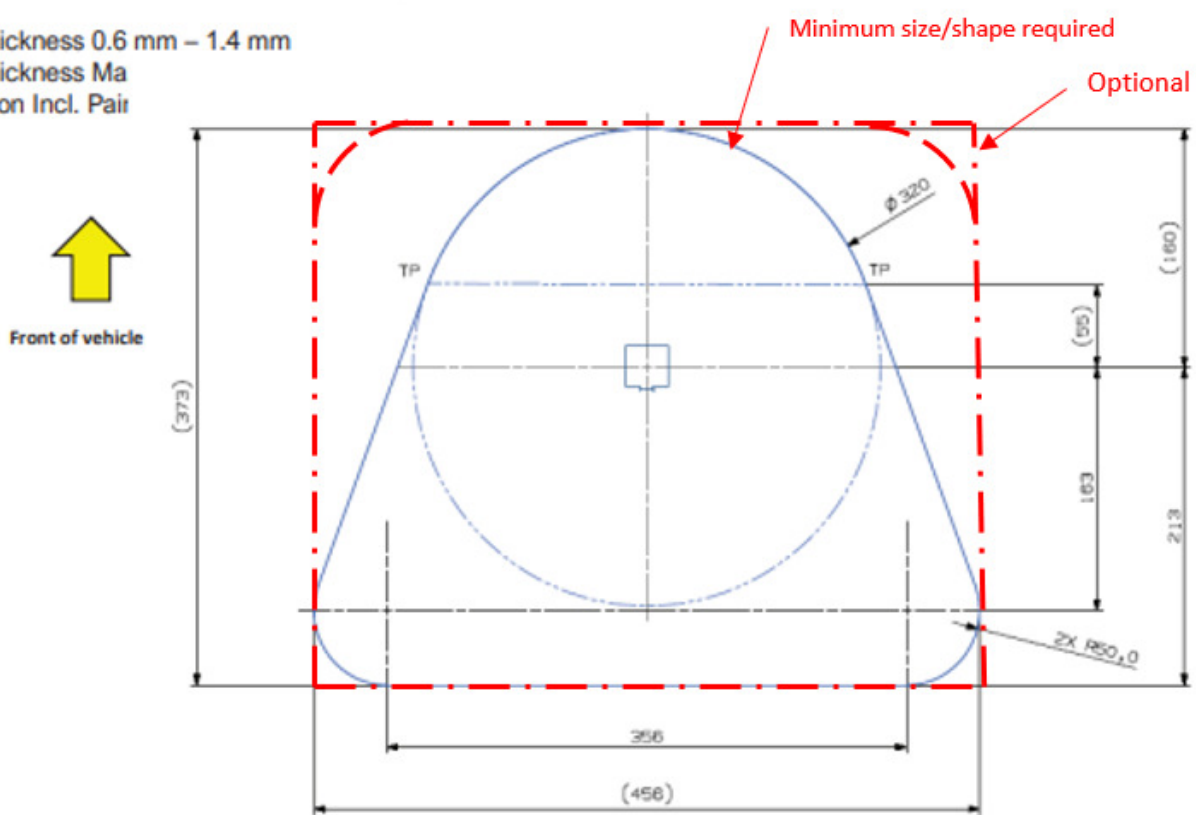
Ground pad can be exposed to sky or submerged below body exterior.

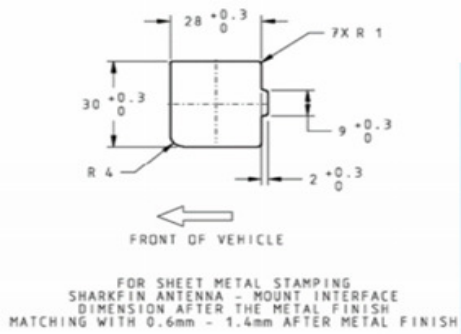


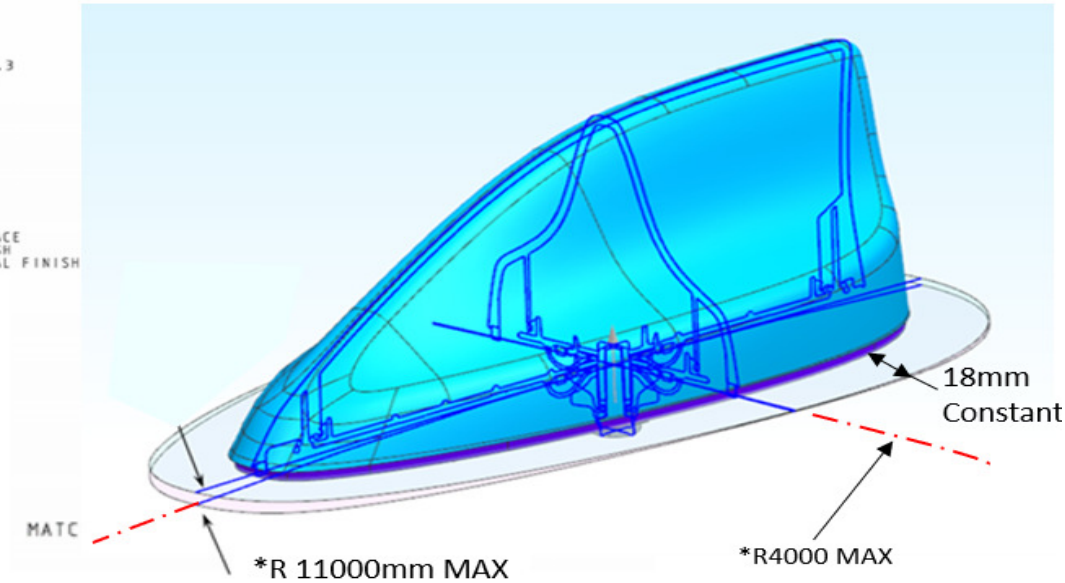
Front of Vehicle

Ground Panel – Minimum Surface Area Requirement

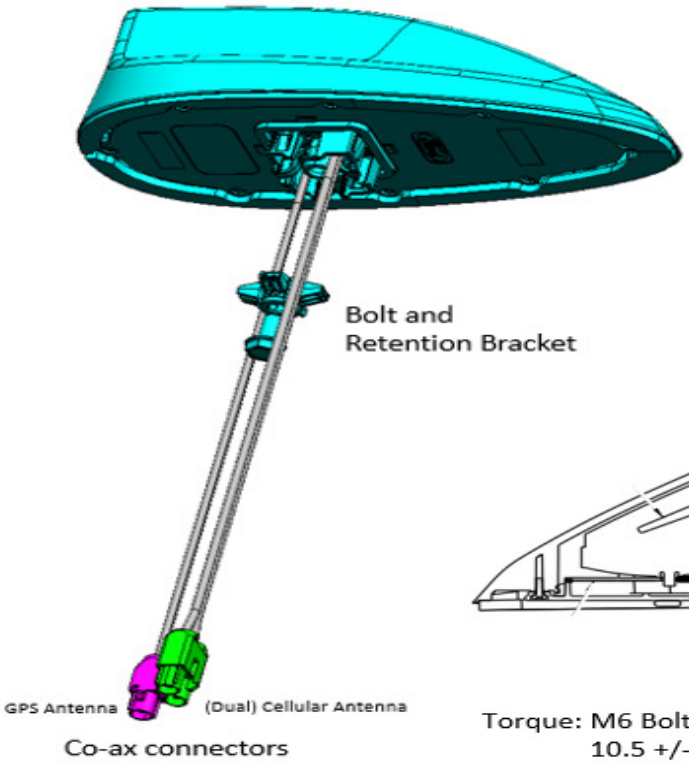
Plate Thickness 0.6 mm – 1.4 mm
Paint Thickness Ma
Dimension Incl. Pai

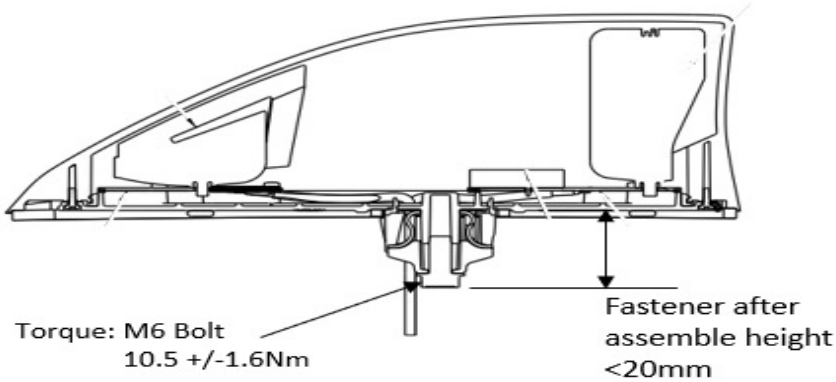




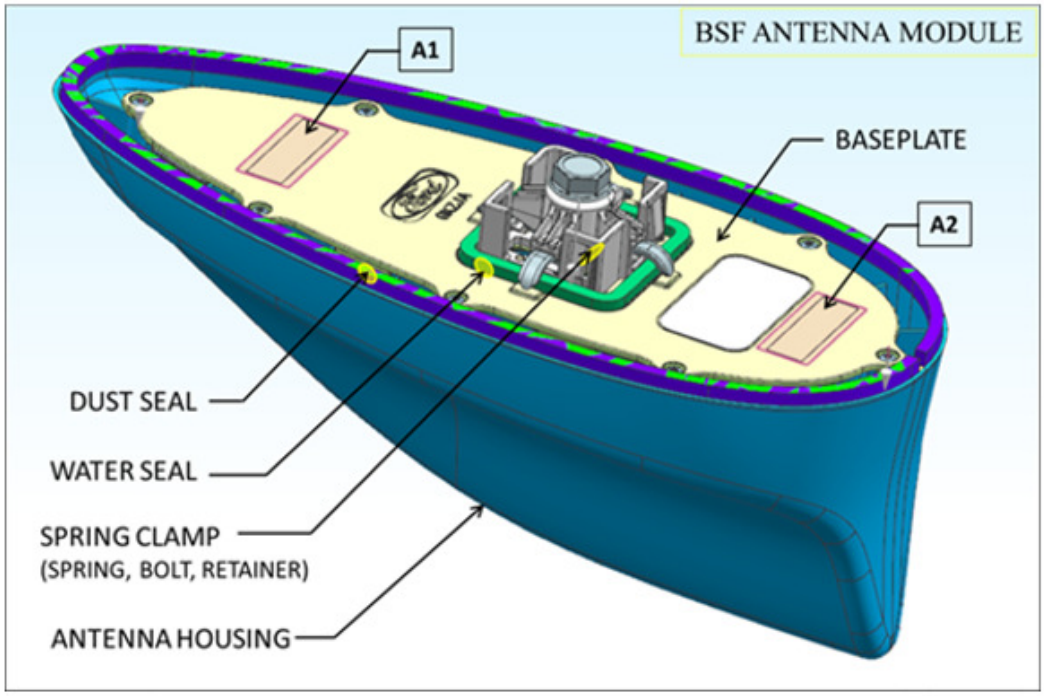


Radius of Ground Panel applies within the 18mm perimeter surface.
*Radius form will provide a (craftsmanship) gap appearance.
Compression of Dust Seal and Water Seal is achieved when module is fully installed in vehicle





A1/A2 – Contact patch – Conductive metal woven gasket



Ground Pad must make contact with the antenna "Contact Patch" A1 and A2.

Refer to the Body Builder Layout Book for additional guidelines and recommendations. If you have any questions, please contact the Ford Body Builders Advisory Service as shown in the header of this bulletin.